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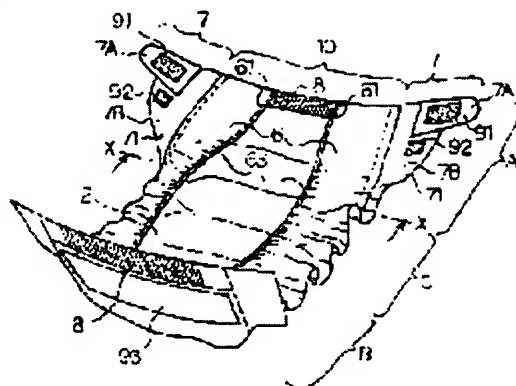
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## (54) ABSORPTIVE ARTICLE

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an absorptive article, such as a throw-away diaper, which is easy to mount and has an excellent fitness around the waist and the legs.

**SOLUTION:** This absorptive article has a front surface sheet, a leak-proof sheet and an absorber, is substantially longitudinally long and is used by fastening back side flaps 7 and 7 to an abdomen side B via fastening means. The back side flaps 7 and 7 have high-rigidity regions 7A and low-rigidity regions 7B having the rigidity lower than the rigidity of the high-rigidity regions. The fastening means consists of main fastening means 91 and auxiliary fastening means 92 disposed nearer the crotch C than the positions where the main fastening means 91 are disposed on the back side A or the abdomen side B. The main fastening means 91 are disposed in the high-rigidity regions 7A and the auxiliary fastening means 92 are disposed in the low-rigidity regions 7B or on the outside surfaces of the abdomen side B to be brought into abutment on the low-rigidity regions 7B.



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## CLAIMS

[Claim(s)]

[Claim 1] It has the surface sheet of liquid permeability, the watertight sheet of liquid impermeability, and the absorber of liquid holdout. In the absorptivity goods used for an antinode flank for this backside side flap section, being substantially longwise, having the backside side flap section of a pair in the right-and-left both-sides section of the back, and attaching firmly through a firm attachment means. Said backside side flap section has a high rigidity field and the low rigidity field where rigidity is lower than this high rigidity field. Said firm attachment means It consists of a main firm attachment means and a subfirm attachment means in said back or said antinode flank formed in length-from-the-crotch-to-the-cuff section approach rather than the location in which this main firm attachment means was formed. This main firm attachment means They are the absorptivity goods with which this subfirm attachment means is formed in the external surface of this antinode flank contacted by said low rigidity field or this low rigidity field by being prepared in said high rigidity field.

[Claim 2] Absorptivity goods according to claim 1 with the shear strength of said subfirm attachment means lower than the shear strength of said main firm attachment means.

[Claim 3] They are the absorptivity goods according to claim 1 or 2 whose rigidity of the direction where the rigidity of the direction which intersects perpendicularly in the direction of hauling at the time of said high rigidity field attaching absorptivity goods firmly intersects perpendicularly in the direction of hauling at the time of being 30-300mm by the cantilever method, and said low rigidity field attaching absorptivity goods firmly is 0-150mm by the cantilever method.

[Claim 4] They are absorptivity goods given in any of claims 1-3 currently formed so that said low rigidity field may surround this high rigidity field among the cross direction of absorptivity goods to a way and length-from-the-crotch-to-the-cuff section side said high rigidity field is formed in the lateral part of the cross direction of the absorptivity goods in the edge by the side of a waist edge, and they are.

[Claim 5] Said backside side flap section is absorptivity goods given in any of claims 1-4 they are with which the end section is located in the length-from-the-crotch-to-the-cuff section.

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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention is easy to equip and it is related with absorptivity goods, such as a disposable diaper excellent in the fit nature of the waist section and the circumference section of a foot.

[0002]

[Description of the Prior Art] Conventionally, it has the surface sheet of liquid permeability, the watertight sheet of liquid impermeability, and the absorber of liquid holdout, and has the backside side flap section which has a firm attachment means in the right-and-left both-sides section of the back, and absorptivity goods, such as a disposable diaper used for the external surface of an antinode flank for this backside side flap section, attaching firmly through this firm attachment means, are known widely.

[0003] In order to raise the tightness of leakage and to raise a feeling of wearing in these absorptivity goods It is important to raise the fit nature of the circumference of the waist and the fit nature of the circumference section of a foot. For example, the tape fastener for fastening the circumference of the tape fastener for fastening the circumference of the waist in the backside side flap section and a foot is formed, and the disposable diaper which raised the fit nature of the circumference of the waist and the circumference of a foot with two kinds of these tape fasteners is proposed. However, in this conventional disposable diaper, the actuation for fixing two kinds of fasteners and equipping with a diaper is not easy.

[0004] Therefore, the purpose of this invention is easy to equip and they is to offer absorptivity goods, such as a disposable diaper excellent in the fit nature of the circumference of the waist section and a foot.

[0005]

[Means for Solving the Problem] This invention is equipped with the surface sheet of liquid permeability, the watertight sheet of liquid impermeability, and the absorber of liquid holdout. In the absorptivity goods used for an antinode flank for this backside side flap section, being substantially longwise, having the backside side flap section of a pair in the right-and-left both-sides section of the back, and attaching firmly through a firm attachment means Said backside side flap section has a high rigidity field and the low rigidity field where rigidity is lower than this high rigidity field. Said firm attachment means It consists of a main firm attachment means and a subfirm attachment means in said back or said antinode flank formed in length-from-the-crotch-to-the-cuff section approach rather than the location in which this main firm attachment means was formed. This main firm attachment means It is prepared in said high rigidity field, and this subfirm attachment means attains the above-mentioned purpose by offering the absorptivity goods prepared in the external surface of this antinode flank interviewed to said low rigidity field or this low rigidity field.

[0006]

[Embodiment of the Invention] Hereafter, this invention is explained based on the desirable 1 operation gestalt. The disposable diaper 1 as absorptivity goods of this operation gestalt is equipped with the body 10 equipped with the surface sheet 2 of liquid permeability, the watertight sheet 3 of liquid impermeability, and the absorber 4 of liquid holdout which has a longwise gestalt substantially.

[0007] The surface sheet 2 and a watertight sheet 3 have a respectively larger dimension than an absorber 4, and pinching immobilization of the absorber 4 is carried out between both [ these ] the sheets 2 and 3. The watertight sheet 3 has extended so that the edges-on-both-sides section may be located in the method of the outside of right and left rather than the edges on both sides 4a and 4a of an absorber 4, and the leg sections 11 and 11 of the pair which meets the both-sides section of a body 10 at the longitudinal direction of the disposable diaper 1 are formed. Moreover, the outer layer sheet 5 made of a nonwoven fabric is arranged, this outer layer sheet 5 has extended in the external surface of a watertight sheet 3 so that the edges-on-both-sides section may be located in the method of the outside of right and left rather than edges-on-both-sides 4a of an absorber 4, and the extension part forms the leg sections 11 and 11 in it with the watertight sheet 3.

[0008] The body 10 is making the longwise abbreviation rectangle-like configuration in the turgescence (henceforth turgescence) which opened the disposable diaper 1 to the plane, and the solid guards 6 and 6 of a right-and-left pair are formed in the both-sides section of a body 10. Each solid guard 6 allots the web material 62 which has an elastic member 61, and is formed, each solid guard's 6 free end 63 is located in the central site of the cross direction of the disposable diaper 1 rather than the end face 64, [ above an absorber 4 ], this end face 64 carries out adhesion immobilization, and the web material 62 is formed in the surface sheet 2. As for each web material 62, with the free end, the edge of the opposite side is stuck on a watertight sheet 3 by having extended so that it may be located in the method of outside [ a / of an absorber 4 / side edge 4 ], and the extension part forms the leg sections 11 and 11 with the watertight sheet 3 and the outer layer sheet 5.

[0009] Moreover, a waist section elastic member (not shown) is arranged in each of both ends of the longitudinal direction of the disposable diaper 1, and the waist gathers 8 and 8 are formed in them. Moreover, although the leg section elastic member for leg gathers formation is not allotted to the leg sections 11 and 11, when the leg section elastic member is allotted, since the leakage from the circumference of a foot is prevented still more effectively, it is desirable. In addition, although two or more elastic members 61 are allotted to abbreviation parallel as shown to each solid guard 6 at drawing 2, only one elastic member 61 is illustrated in drawing 1.

[0010] \*(ing), this disposable diaper 1 has the backside side flap sections 7 and 7 of a pair in the right-and-left both-sides section of the back A allotted to a wearer's backside at the time of wear.

[0011] both the backside side flap sections 7 and 7 are shown in drawing 1 -3 -- as -- the both-sides sections 10a and 10a of a body 10 -- it

is alike, respectively, and it is fixed and the web material 71 for flap formation is formed so that it may project in the method of outside from these both-sides sections 10a and 10a. As shown in drawing 3, the web material 71 for each flap formation has the longwise abbreviation triangle-like configuration, and the side edge section of the crosswise central site of the disposable diaper 1 in this web material 71 is pinched between the web material 62 in a body 10, and a watertight sheet 3, and it is being fixed.

[0012] Each backside side flap section 7 is making the shape of an abbreviation right triangle in turgescence, and the end section 7c is located in the length-from-the-crotch-to-the-cuff section C allotted to a wearer's length-from-the-crotch-to-the-cuff section at the time of wear. One side edge section 7a of the crosswise central site of a diaper in each backside side flap section 7 is making the shape of a straight line which makes abbreviation parallel in turgescence to Chuo Line which extends in the longitudinal direction of a diaper, and other side edge section 7b by the side of the method of the outside of the cross direction of a diaper is making the shape of a straight line whose include angle theta to this 1 side edge section 7a (refer to drawing 3) is 15-45 degrees.

[0013] Each backside side flap section 7 has rigid low low rigidity field 7B rather than high rigidity field 7A and this high rigidity field 7A. That is, rigid high high rigidity field 7A is formed in the lateral part of the cross direction of the diaper in 7d of edges by the side of the waist edge 81 of this backside side flap section 7 as a part of each web material 71 for flap formation, and a part to which other web materials 72 and 72 were specifically stuck on the point of the protrusion direction, and the laminating of two or more web materials 71 and 72 was carried out. High rigidity field 7A had the gestalt oblong to the cross direction of a diaper, and has projected further the edge by the side of the method of the outside to the method of outside from said other side edge section 7b in the backside side flap section 7.

[0014] On the other hand, the part to which the laminating of the web material 72 in the backside side flap section is not carried out, i.e., the part which consists only of a web material 71, is low rigidity field 7B. Low rigidity field 7B is formed so that said high rigidity field 7A may be surrounded among the cross direction of a disposable diaper to a way and length-from-the-crotch-to-the-cuff section side. In addition, the width of face W (refer to drawing 3) which meets crosswise [ of the disposable diaper 1 ] is increasing gradually as it goes to the lower limit section of end section 7c to high rigidity field 7A by the side of the length-from-the-crotch-to-the-cuff section C.

[0015] Although they are attached firmly to the external surface of the antinode flank B, respectively in case both the backside side flap sections 7 and 7 equip with a diaper as shown in drawing 5 This disposable diaper 1 has the main firm attachment means 91 formed in high rigidity field 7A, and the subfirm attachment means 92 formed in length-from-the-crotch-to-the-cuff section C approach rather than the location in which this main firm attachment means 91 in low rigidity field 7B was formed as a firm attachment means.

[0016] The main firm attachment means 91 is formed in the waist section 82 allotted to the circumference of a wearer's waist, or its near at the time of wearing of a diaper, and, more specifically, the subfirm attachment means 92 is formed in the periphery section 83 caudad located rather than this waist section 82.

[0017] Both the firm attachment means 91 and 92 of the main \*\* in this disposable diaper 1 are constituted so that it may engage with the attached firmly firmly section which all has much engagement projections on a front face and by which was been the male member of a mechanical fastener, and all allotted the female member (attached firmly firmly means) 93 of a mechanical fastener to the external surface of the antinode flank B, and were formed in it free [ attachment and detachment ]. Both the firm attachment means 91 and 92 of the main \*\* are joined by the proper junction approaches, such as joining and adhesion, on the field of high rigidity field 7A or low rigidity field 7B, respectively. As a male member of a mechanical fastener, "the piece of Velcro (trademark) etc." by Kuraray Co., Ltd. etc. can be used, for example. In addition, the firm attachment means 91 and 92 of the main \*\* may carry out engagement etc. to the attached firmly firmly section 93 on which the one side or both sides is not arranged for the female member of a mechanical fastener etc. and which consists of an outer layer sheet 5. Moreover, two or more both firm attachment means 91 and 92 may be arranged respectively at high rigidity field 7A and low rigidity field 7B. Moreover, both the firm attachment means 91 and 92 may be firm attachment means of a configuration of differing.

[0018] The area of the engagement side where the male member of the mechanical fastener as a subfirm attachment means 92 in this disposable diaper 1 may engage with the attached firmly firmly section 93 is 20 - 80% of the area of the engagement side of the main firm attachment means 91, and the shear strength of the subfirm attachment means 92 is lower than the shear strength of the main firm attachment means 91. The effectiveness of the firm attachment means searched for in order to obtain the fit nature excellent in the circumference of a foot is comparatively weak firm attachment of the side flap instead of strong firm attachment equivalent to the circumference of the waist being turned over, preventing a riser, and maintaining the firmness of a diaper, and also in order not to give a feeling of oppression to the circumference of a foot with much momentum compared with the circumference of the waist, the shearing force of a subfirm attachment means is because the one lower than the shearing force of the main firm attachment means is desirable.

[0019] here -- both the firm attachment means 91 and 92 -- each shear strength is the following, respectively, and is made and measured. As shown in drawing 6, namely, the attached firmly firmly section on the antinode flank B which engages with the main firm attachment means 91 (the attached firmly firmly means 93, outer layer sheet 5 grade) It judges so that the longitudinal direction x cross direction of a diaper may be set to 5cmx5cm, and a double-sided tape is used for the end section of this acrylic board 29, and obtained attached firmly firmly section B' is pasted up on it so that the cross direction a of the diaper of this attached firmly firmly section B' may be in agreement with the longitudinal direction of the Al Lil plate 29. Moreover, the main firm attachment means 91 is judged so that the longitudinal direction x cross direction of a diaper may be set to 3cmx2cm, the rear-face side of this main firm attachment means 91 is stuck on the end side of this film 31 so that it may be in agreement with the longitudinal direction of the film 31 whose cross direction a of the diaper of this firm attachment means 91 is 3cmx12cm, and the sample tape 30 is created.

[0020] Subsequently, put on the end section of this ARURIRU plate, a 1kg roller is made once restored on this sample tape 30, and the main firm attachment means 91 is made to stick to attached firmly firmly section B' by pressure so that the whole front face of the main firm attachment means 91 on which the end section of the sample tape 30 was stuck may contact attached firmly firmly section B'. and so that the longitudinal direction of this sample tape 30 may be in agreement with the longitudinal direction of the Al Lil plate 29. Then, the near edge where the sample tape 30 is not stuck on the main firm attachment means 91 was grasped, it pulled by 300 mm/min in the direction (the same direction as the longitudinal direction of an acrylic board 29 and the sample tape 30) shown by the void-among drawing 6 arrow head, and the force required for this sample tape 30 to exfoliate from above-mentioned attached firmly firmly section B' was measured. The same actuation was repeated 10 times and measurement data was obtained. Data processing of the obtained data was carried out using Cage En Tech friction test mode data-processing software [the trade name "MPW-300P" Windows 95 version], and the "maximum point load value" in this estimated shearing force. The shear strength of the subfirm attachment means 92 was measured similarly. In addition, as the above-mentioned film 31, if the above-mentioned main firm attachment means 91 is fixable, it is arbitrary.

[0021] Moreover, as for high rigidity field 7A in which the main firm attachment means 91 is formed, it is desirable that the rigidity of the

direction which intersects perpendicularly in the direction of hauling at the time of attaching a disposable diaper firmly from a viewpoint excellent in the firm attachment nature at the time of diaper wearing is 30-300mm by the cantilever method. its 50-200mm is more desirable, and its 80-150mm is still more desirable. Moreover, as for low rigidity field 7B in which the subfirm attachment means 92 is formed, it is desirable that the rigidity of the direction which intersects perpendicularly in the direction of hauling at the time of attaching a disposable diaper firmly from a viewpoint which should be excellent in the fit nature in a wearer's flank is 0-150mm by the cantilever method. its 0-120mm is more desirable, and its 0-100mm is still more desirable. Moreover, as for the rigidity of the direction which intersects perpendicularly in the direction of hauling at the time of attaching a disposable diaper firmly, it is desirable that the rigidity of high rigidity field 7A is larger than the rigidity of low rigidity field 7B 40-100mm by the cantilever method.

[0022] The direction of hauling at the time of the direction of hauling at the time of attaching firmly the disposable diaper of high rigidity field 7A in this operation gestalt here meaning the cross direction of a diaper, and attaching firmly the disposable diaper of low rigidity field 7B means the cross direction of a diaper. In addition, the rigid measuring method by the cantilever method is JIS. L1096 It is specified to 6.19.1. The test piece of 30cm of 2cmx abbreviation and a low rigidity field extract six each for the test piece of 15cm of 2cmx abbreviation, and, specifically, a high rigidity field makes the average of six sheets measured value, respectively. When the field from which rigidity differs in a high rigidity field and a low rigidity field is intermingled, let the largest part of surface ratio be a test piece.

[0023] Next, the formation ingredient of each part material which constitutes the disposable diaper 1 of this operation gestalt is explained. As a formation ingredient of the surface sheet 2, a watertight sheet 3, an absorber 4, the outer layer sheet 5, the web material 62 for solid guard formation, and an elastic member 61, what is used for a disposable diaper can usually be especially used without a limit.

[0024] Moreover, as a formation ingredient of the web material 71 for flap formation, a nonwoven fabric, textile fabrics, knitted fabric, a film, form material, or those combination can be used preferably, and the ingredient of elasticity can also be used. Moreover, as a formation ingredient of the web materials 72 and 72 for high rigidity field formation, especially as long as it may make a high rigidity field form, it may not be restricted, but the same ingredient as a web material 71 may be used, and an ingredient which is different in a web material 71 may be used, for example, a nonwoven fabric, a film, plastics, or those combination can be used preferably.

[0025] High rigidity field 7A in which the main firm attachment means 91 in the disposable diaper 1 of this operation gestalt was formed functions as the grasping section at the time of equipping with a diaper. That is, this disposable diaper 1 grasps high rigidity field 7A in which the main firm attachment means 91 was formed, and pulls it to the antinode flank B side, and a wearer is equipped with it by attaching this main firm attachment means 91 firmly to the external surface of the antinode flank B.

[0026] In this disposable diaper 1, even if it pulls at the time of wearing by making into the grasping section high rigidity field 7A in which the main firm attachment means 91 was formed, it is hard to produce deformation in this high rigidity field 7A. Therefore, the firm attachment to the antinode flank B external surface of the main firm attachment means 91 is very easy, and can equip the optimal bolting condition with a diaper for a diaper quickly. Moreover, the bolting condition is mainly maintained by stability with the main firm attachment means 91. The fit nature which was excellent in the waist section in this disposable diaper with this is obtained.

[0027] Moreover, since the backside side flap section 7 has low rigidity field 7B and the subfirm attachment means 92 is formed in this low rigidity field 7B, un-arranging [ that the main firm attachment means 91 becomes easy to separate from the attached firmly firmly section ] does not arise like [ at the time of raising the rigidity of all the parts of the backside side flap section ]. And in order to deform so that low rigidity field 7B allotted near the leg sections 11 and 11 may meet a wearer's skin, the fit nature excellent in the circumference of a wearer's foot is obtained. Since low rigidity field 7B is formed so that a way and length-from-the-crotch-to-the-cuff section side may be surrounded among the cross direction of the disposable diaper of said high rigidity field 7A, this disposable diaper 1 is what was especially excellent in the fit nature of the circumference of the waist section and a foot.

[0028] Moreover, in case the main firm attachment means 91 is attached firmly to the external surface of the antinode flank B, compared with the case where it is made as [ attach / to this antinode flank / at coincidence / the subfirm attachment means 92 ], therefore two kinds of FASUNINGU tapes are fixed, wearing actuation is very easy, for example, even if it is a case so that a baby may move violently, it can equip with a diaper easily and quickly.

[0029] As mentioned above, although 1 operation gestalt of this invention was explained, various modification is possible for this invention within limits which are not restricted to the above-mentioned operation gestalt and do not deviate from the meaning of this invention. For example, although the backside side flap sections 7 and 7 in the above-mentioned operation gestalt fix a web material to a body 10 and it is formed, the backside side flap section in this invention may be extended and formed in the diaper side in the member 62 which constitutes a body 10, for example, the web material for solid guard formation, and outer layer sheet 5 grade. In that case, a part of web material 72 is put between a web material 62 and two or more members which constitute the body which extended to the diaper side of outer layer sheet 5 grade, and the main firm attachment means may be arranged at a part of web material 72 projected from side edge section 7b to the method of outside. The above-mentioned disposable diaper 1 has the venter side flap section of the pair formed in the right-and-left both-sides section of the antinode flank B by doing in this way. Moreover, the high rigidity field may exist the perimeter, after having been surrounded by the low rigidity field.

[0030] Moreover, the subfirm attachment means 92 is a part where said low rigidity field 92 is contacted at the time of diaper wear in the external surface of the antinode flank B, and may be formed in the part of length-from-the-crotch-to-the-cuff section C approach rather than the part where said high rigidity field 91 is attached firmly. For example, the subfirm attachment means 92 may be formed in the D section in drawing 5, and the same activity effectiveness as the disposable diaper 1 of the above-mentioned operation gestalt may be done so also with the disposable diaper of this configuration. Moreover, even if there are few web materials 71 for flap formation, the part of length-from-the-crotch-to-the-cuff section C approach may engage with the attached firmly firmly means 93, the outer layer sheet 5, or its both directly rather than the high rigidity field 91.

[0031] Moreover, the configuration of a high rigidity field and each low rigidity field will not be restricted especially if it is the configuration that the rigidity of this low rigidity field becomes low relatively rather than a high rigidity field. For example, although the laminating number of sheets of a sheet may be made [ many ] and a high rigidity field may form it rather than a low rigidity field as in the above-mentioned operation gestalt, it can also form successively and form the sheet of high rigidity in the sheet which forms a low rigidity field rather than this sheet. Moreover, each of both the firm attachment means of the main \*\* may be the adhesion section which applied and formed adhesion material in the high rigidity field or the low rigidity field. Moreover, this invention is also applicable to others and incontinencia putt, a sanitary napkin, etc. for a baby or an adult. [ diaper / disposable ]

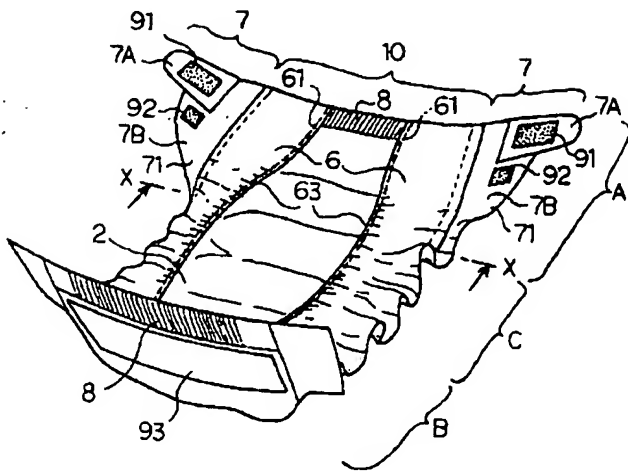
[0032]

[Effect of the Invention] The absorptivity goods of this invention are easy to equip, and they is excellent in the fit nature of the

circumference of the waist section and a foot.

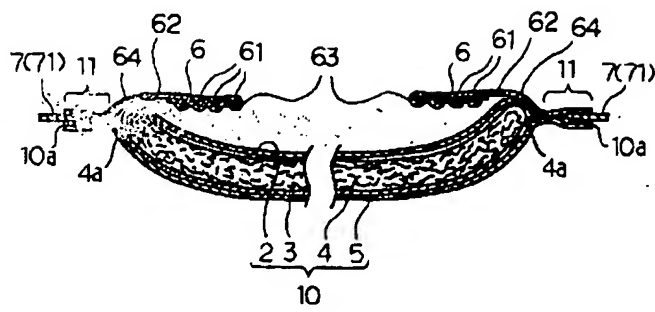
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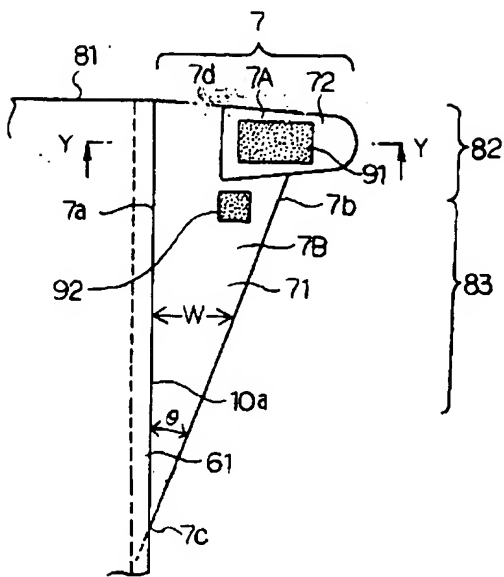
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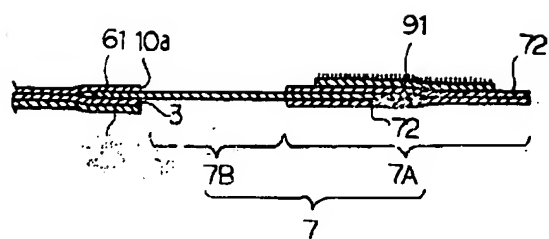


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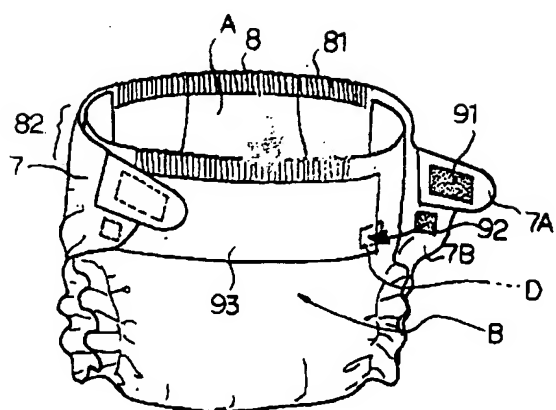
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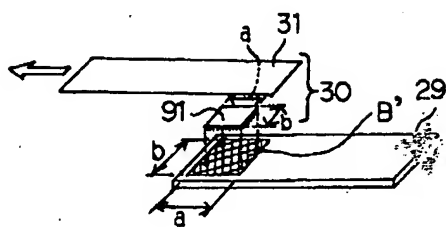
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